CLAIMS

What is claimed is:

1. A method for dynamically allocating data for caching in a network storage system, said method comprising the steps of:

storing a plurality of files in a plurality of intelligent storage nodes;

receiving a plurality of requests for a file;

for each request for said file,

selecting one of a plurality of control nodes;

retrieving said file from an intelligent storage node that stores said file; and

storing said file retrieved in a cache at said control node,

whereby, allocating said control nodes to retrieve files dynamically stores files in said caches of said control nodes based on demand for said file.

2. The method as set forth in claim 1, further comprising the steps of:

determining whether said file is stored in a cache of a control node prior to retrieving said file from an intelligent storage node; and

delivering said file from said cache in response to said request.

3. The method as set forth in claim 1, further comprising the step of replacing entries in said caches of said control nodes through a least recently used cache policy.

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4.   The method as set forth in claim 1, wherein the step of receiving a plurality of requests for a file comprises the step of receiving a plurality of requests over a network.

5.   A storage system comprising:

a plurality of intelligent storage nodes for storing a plurality of files;

a plurality of control nodes, each control node comprising a cache;

an interface for receiving a plurality of requests for a file, and for selecting one of said control nodes to retrieve said file;

said control nodes for processing a request by retrieving said file from an intelligent storage node that stores said file, and by storing said file retrieved in a cache at said control node,

whereby, allocating said control nodes to retrieve files dynamically stores files in said caches of said control nodes based on demand for said file.

6.   The storage system as set forth in claim 5, wherein said interface comprises a switch that includes load balancing functionality.

7.   The storage system as set forth in claim 5, wherein said control nodes further comprise processes for determining whether said file is stored in a cache of a control node prior to retrieving said file from an intelligent storage node, and for delivering said file from said cache in response to said request.

8. The storage system as set forth in claim 5, wherein said control nodes further comprise processes for replacing entries in said caches of said control nodes through a least recently used cache policy.

5   9. A storage system comprising:

a first storage center comprising:

a plurality of control nodes, each control node comprising a cache;

an interface for receiving a plurality of requests for a file, and for selecting one of said control nodes to retrieve said file;

10   a second storage center comprising a second set of intelligent storage nodes for storing a plurality of files;

a network for coupling said intelligent storage nodes in said second storage center to said control nodes in said first storage center; and

15   said control nodes for processing each request by retrieving, from said second storage center, said file from an intelligent storage node that stores said file, and by storing said file retrieved in a cache at said control node in said first storage center,

whereby, processing requests in said first storage center to retrieve files from said second storage center dynamically stores files in said caches of said control nodes in said first storage center.

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10. The storage system as set forth in claim 9, wherein said interface comprises a switch that includes load balancing functionality.

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11.   The storage system as set forth in claim 9, wherein said control nodes further comprise processes for determining whether said file is stored in a cache of a control node prior to retrieving said file from an intelligent storage node, and for delivering said file from said cache in response to said request.

12.   The storage system as set forth in claim 9, wherein said control nodes further comprise processes for replacing entries in said caches of said control nodes through a least recently used cache policy.